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REMARKS/ARGUMENTS

Allowable Subject Matter

The Applicant notes with appreciation this allowance of claims 1, 3-16, 24, 25, 31 and 32. Additionally, claim 26 is identified as allowable over the cited prior art, but objectionable since it is dependent upon a claim which the Examiner has rejected.

Claims rejected based upon newly cited art

Claims 17, 19-23, 27-30 and 34-39 are now rejected under 35 USC 103(a) as being unpatentable over US Patent Publication 2004/0131093 to Waarts in view of US Patent 6816516 to Daiber and US Patent Publication 2004/0262514 to Kim. Waarts, Daiber and Kim are each newly cited. This ground for rejection is respectfully traversed.

Claim 17

The Examiner asserts that Waarts teaches several aspects of claim 17 in the opening lines of the paragraph at the top of page 3 of the official action. With all due respect, the Examiner misinterprets Waarts.

First, the Examiner asserts that Waarts depicts a Fabry-Perot etalon 135 which performs a "tuning operation". With all due respect, the Fabry-Perot etalon 135 is fixed. It performs no tuning what-so-ever. The assertion that it performs a "tuning operation" or that it meets the limitation "tuning said tunable Fabry-Perot etalon" is quite incorrect. It is true the angle of Waarts depicts a Fabry-Perot etalon 135 is set to suit design parameters when the Waarts laser device is designed, but that human design operation is not the sort of tuning connoted by the claim language where the claim recites "electrically tuning said tunable Fabry-Perot etalon". There is no reason to substitute an electrically tuned Fabry-Perot etalon for a static Fabry-Perot etalon!

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Waarts patent's main goal is to form "Laser light for Nonlinear Conversion", typically second harmonic generation. Therefore, he is not trying to generate single frequency light, as required by WDM networks for example. In fact, his patent mentions many times (see Fig. 3A and 3B) that his emission contains "a plurality of longitudinal modes". He uses two non-tunable frequency selective elements - a Fabry-Perot etalon, and a conventional Bragg grating that has one broad (see Waarts' Fig. 2) reflectivity peak - for the external cavity laser (ECL) he discloses. So Waart is trying to select and generate a multitude of ECL modes (see his Fig. 3), so that he can form a wide enough spectrum suitable for nonlinear conversion. Although he uses two frequency selective elements, no tuning, Vernier or otherwise, that enables a some tuning range is taught. So why does the Examiner characterize his Fabry-Perot etalon as being tunable? Only to try to find a basis to reject claim 17. That is, with all due respect, improper!

Second, the Examiner asserts that Waarts meets the limitation "grating fabricated in a silica waveguide for reflection back to said gain element" with Waarts' grating 150. With all due respect, that is simply not the case. Waarts' grating 150 does not reflect "back to said gain element" as claimed. Reflecting towards a gain element is not the same thing as reflecting "to" the gain element as claimed. Note the presence of Waarts' angled Fabry-Perot etalon 135. Waarts specifically teaches that it is set at an angle "to avoid reflection of light into the laser diode". So instead of reflecting "back to said gain element" as claimed, Waarts teaches the reader to do just the opposite! Yet the Examiner reads Waarts on this very limitation.

The rejection of claim 17 is an obviousness type rejection so the Examiner suggests combining Waarts with other art.

Turing first to Daiber, the Examiner asserts that it would have been obvious to replace Waarts' angled Fabry-Perot etalon 135 with an electrically tunable etalon "as a matter of engineering design choice allowing for an alternative method to complete an

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identical function which allows for alignment simplification of the optical elements".

With all due respect, there are several inaccuracies in this assertion.

First, there is no "identical function". Waarts teaches a fixed Fabry-Perot etalon 135 which has "multiple transmission peaks 210, 220, and 230 of a spectral width b spaced by a contrast frequency interval". See paragraph 0032 of Waarts describes the function of the Fabry-Perot etalon 135. In Daiber, his electrically tunable etalon performs a completely different function. Note his completely different passbands and completely different purpose. Also, Waarts teaches a fixed Fabry-Perot etalon or why replace it with a more complex tunable Fabry-Perot etalon? And as mentioned above, Waarts places his Fabry-Perot etalon at an purposeful angle to the light path to keep light from getting back into the light source. So there is no reason to make the replacement "as a matter of engineering design choice allowing for an alternative method to complete an identical function which allows for alignment simplification of the optical elements" as asserted by the Examiner since that is specifically against the teachings of Waarts!

Turing to Kim, the Examiner asserts that it would have been obvious to replace Waarts' grating with a sampled grating per Kim. The stated rationale is to "utilize a reflection spectrum which allows for a wide tuning range". Why is that useful in Waarts? Waarts has no "tuning range". Why make something which does not exist wide? Or narrow? Or whatever?

With all due respect, these are just words which the Examiner sees in the cited art. This is not the sort of reasoned rationale to which the Applicant is entitled when such a rejection is made. As stated in the Appeal Brief, "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness" The obviousness analysis "should be made explicit." See *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1734 (2007).

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Claim 19

Turning to claim 19, the Examiner asserts that Waarts "further teaches Vernier tuning". With all due respect, that is simply not the case. The Examiner points to Waarts' Fig. 2-4. Where do those figures either show or mention Vernier tuning? And if they allegedly show Vernier tuning, one would think that Waarts' specification might mention it a well! So where are those references? Where is the ANY reference to tuning in Waarts outside of the mention that one can design things to operate at different frequencies?

Well a person can design anything to operate at different parameters, but that does not mean that the thing is then inherently tunable or that tuning occurs.

It is respectfully submitted that the Examiner's assertion about Vernier tuning comes not from Waarts but rather from some understanding or teaching that the Examiner has. Well if the Examiner wants to use that information, where ever it comes from as prior art, then such factual assertions must be placed in affidavit format and the applicant must be given the privilege by relying by filing counter affidavit(s) as specifically required by 37 CFR 1.104.

The Applicant has requested the Examiner's cooperation in complying with the rules of practice. Full compliance with 37 CFR 1.104 is again requested.

Claims 27 and 28

The Examiner asserts that certain things are well known in the art. If the Examiner is correct it should not be too difficult to cite a reference or two supporting such assertions. Otherwise, kindly place all assertions regarding what is allegedly known in the art outside of the specific teaching of the cited references in an affidavit as specifically required by 37 CFR 1.104. Just because other materials may be known in the art to be used with other amplifiers or etalons, does not mean that it is automatically obvious to use different materials in the context of the present claims. Let's see what the art really teaches before jumping to conclusions.

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Claim 29

This claim is rejected for the same reasons as was claim 17 and 27-28. In response, the applicant notes the following:

(1) Waarts does not teach a tunable Fabry-Perot etalon. See the discussed above regarding claim 17.

(ii) There is no refection back to the gain element as previously pointed out.

(iii) No reasonable rationale has been provided for substituting Daiber's electrically tunable Fabry-Perot etalon for Waarta's fixed Fabry-Perot etalon.

(iv) The stated rationale for combining Waarts and Kim does not stand up to scrutiny.

(v) The previously requested affidavits have not been provided as required by 37 CFR 1.104.

The rejection is, with all due respect, without merit and should be withdrawn.

Claim 33

This claim is rejected for the same reasons as was claim 17. In response, the applicant notes the following:

(1) Waarts does not teach a tunable Fabry-Perot etalon. See the discussed above regarding claim 17.

(ii) There is no refection back to the gain element as previously pointed out.

(iii) No reasonable rationale has been provided for substituting Daiber's electrically tunable Fabry-Perot etalon for Waarts' fixed Fabry-Perot etalon.

(iv) The stated rationale for combining Waarts and Kim does not stand up to scrutiny.

The rejection is, with all due respect, without merit and should be withdrawn.

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Claims 34, 36 and 38

The Examiner asserts that the grating in Waarts has a sequence of reflectivity peaks and that the etalon selects the "used peaks" citing Figs. 3B and 4A. With all due respect, that is not what those figures show. The etalon has multiple peaks, not the grating. See paragraph 0032.

It is respectfully submitted that the Examiner's assertion a a sequence of reflectivity peaks and that the etalon selects the "used peaks" comes not from Waarts but rather from some understanding or teaching that the Examiner has. Well if the Examiner wants to use that information, where ever it come from as alleged prior art, then such factual assertions must be placed in affidavit format and the applicant must be given the privilege by relying by filing counter affidavit(s) as specifically required by 37 CFR 1.104.

The Applicant has requested the Examiner's cooperation in complying with the rules of practice. Full compliance with 37 CFR 1.104 is again requested.

Reconsideration is respectfully requested.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account no. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 12-0415.

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